

## **RCoA Research, Education & Travel Grants 2018**

**Award:** Sargant Fund

**Applicant:** Dr Edward Costar

**Project Title:** *Purchase of an ORSIM fiberoptic intubation simulator*

### **Project Description:**

Charing Cross Hospital is a leading centre for head and neck cancer surgery and home to the National Centre for Airway Reconstruction. The patient population we deal with comprises major head and neck cancer cases requiring major excision and flap reconstruction as well as an unusually high number of cases of airway stenosis requiring laryngotracheal reconstruction. As such we see a large volume of patients with anatomically and pathologically challenging airways. We also provide a large proportion of the training opportunities in advanced ENT, head and neck and airway anaesthesia for trainees on the North West Thames rotation.

As evidenced by the current Difficult Airway Society project to develop a national guideline for awake tracheal intubation, awake intubation is an underused skill in the UK, and an area where training opportunities can be hard to come by. This can create a situation where the anaesthetist is called upon to perform this challenging procedure in a difficult airway without recent enough experience to feel truly at ease. It can also result in our trainees regarding this as an exceptional procedure that they are lucky to get to see, rather than what should be a standard part of our skill set.

We wish to purchase an ORSIM fiberoptic intubation simulator for use in developing and maintaining the skills of the consultants and trainees in the department. This device consists of a realistic bronchoscope handle and camera element which connects to a laptop running advanced simulation software. The initial mode of operation provides exercises to allow the beginner to develop the dexterity and hand-eye coordination required to drive the scope successfully through a series of increasingly complex obstacles. Intermediate level users can progress to navigating realistic on screen simulations of the airway with movement, secretions and "patient" response to contact with the tissues. Advanced users can benefit from the simulation of pathology in the supraglottic, glottis and subglottic areas, tumours, bleeding and increased situational difficulty from patient monitoring alarms.

We see a clear patient benefit from this device as it would allow all of the consultant body to maintain a high level of familiarity, especially those who do not regularly anaesthetise head and neck patients but may be called upon to look after them when on call. Moreover, this device would integrate with and significantly enhance our educational offer to our trainees. Currently, as well normal clinical training, we offer: a three monthly airway course (ICAN: Imperial Complex Airway Navigation) which covers

the full range of advanced airway techniques; an awake fiberoptic intubation course in which the participants practice on each other, which would be enhanced by the opportunity to establish the core psychomotor skills on the simulator; airway simulations in the ICU setting, which extend the benefit of the simulator to the ICU trainees and consultants as well. Currently our ability to train juniors is limited by cost to the use of expired disposable scopes which have less than ideal performance and lack durability.